VOLUME XXVII, NO. 3
JANUARY 16, 1974

THE WORLD IN VIEW

WHAT is the world to us? Does the way we think about the world have an effect on how we think about ourselves? Does it affect our relations with the world? The answer is most certainly yes, to both questions. And in recent years there have been various critics of the way most people think about the world. The ecologists have their objections, the psychologists have theirs, and social historians and philosophical essayists find fault with typical habits of mind. Some criticisms are sharply pointed, others vague, but there is wide agreement that certain present-day ideas about the world are peculiarly limiting, destructive in their effect, and diminishing to human beings.

Most familiar, today, are the charges of the ecologists. We look at the world, they say, as nothing more than a collection of raw materials for our use and pleasure. Nature's processes and balances have no meaning to us except as keys to its resources and to the rules for extracting them. The world is allowed no intentions of its own, has no integrities or dignities that require our respect. This is what the more thoughtful of the ecologists say, when they point to progressive stages of mutilation and ruin men have worked on the face and support systems of the planet. We must learn to think about nature differently, they say. Even our self-interest will compel reform, they say, but self-interest is not good enough. The degree of pantheistic reverence in such warnings and appeals varies with individuals, but the ardor of this feeling can be sensed in the work of many of the ecologists, suggesting the renewed flow of a quality in human beings which has been too long repressed. This feeling is now finding expression, although no one is sure of what, exactly, it portends. Our psychologists (save for Maslow and one or two others) have never interested themselves in this side of human beings, and science per se has no language for speaking of it except in terms of denying either its existence or its relevance.

However, now and then a perceptive psychiatrist notices the sickness which results from the modern alienation from nature—the loss of the feeling of kinship with the non-human world. Harold Searles has written:

> It is my conviction that there is within the human individual a sense of *relatedness to his total environment*, that this relatedness is one of the transcendently important facts of human living, and that if he tries to ignore its importance to himself, he does so at peril to his psychological well-being. . . . By "relatedness" I mean a sense of ultimate kinship, a psychological commitment to the structural relationship which exists between man and the various ingredients of his nonhuman environment.

What has broken the feeling of relationship with the natural environment? We have had answers to this question from the thoughtful men of every generation, ever since the days of Schiller and Carlyle, and more general anticipation from even earlier writers. One version of the common element in their explanation was given recently by William Barrett in *Irrational Man:*

> Every step forward in mechanical technique is a step in the direction of abstraction. This capacity for living easily and familiarly at an extraordinary level of abstraction is the source of modern man's power. With it he has transformed the planet, annihilated space, and trebled the world's population. But it is also a power which has, like everything human, its negative side, in the desolating sense of rootlessness, vacuity and the lack of concrete feeling that assails modern man in his moments of real anxiety.

The generalized criticism which this situation evokes usually points to the lack of awareness on the part of modern man of the vast system of living interdependencies which a wide-awake openness to nature reveals—an indifference bringing ruthless exploitation, waste, and a casual defacing of the natural environment, with total

disregard of what might be called the metaphysical aspect of such behavior. No one now uses and few understand the concepts employed by Lecky more than a century ago, when he remarked, at the end of his *Rationalism in Europe*, that there has always been "an intimate connection between utilitarianism and those systems of metaphysics which greatly restrict and curtail the original powers of our nature, regarding the human mind as capable only of receiving, arranging, and transforming ideas that come to it from without." This is the theory of knowledge which grew out of the one-dimensional Newtonian cosmos so deplored by Blake, leading to the triumph of mechanistic conceptions of causation and a purely physical idea of both man and nature. Lecky also associates these ideas with a low standard of motives, with heroism and individuality no longer contributing leadership and inspiration in human affairs.

An interesting aspect of these developments is presented by J. H. van den Berg in *The Changing Nature of Man* (Norton, 1961). To establish what he wishes to discuss, this Dutch psychiatrist quotes from a character in a book by Charles Morgan (*Reflections in a Constant Mirror*)*:*

> "The sea, the sky . . . not only the sky and the sea are in question. The songs of birds, firelight and sunlight, the woods, the turn of the seasons, the earth itself and the smell of it, the whole natural magic going on behind our little journey from the cradle to the grave. Well," he said, "you have to choose. What are they? Are they still what they have always been: the perspective of our mortality and, for some of us, an emblem or at least an analogy of our immortality? Or have they become, as it were, infected by our impermanence? Are they little more than a stage-setting to our personal and social drama? It's a question of relationship and of our view of that relationship. Are we related to them at all, as mankind has always supposed? Is the earth that we touch a part of ourselves, or has it become just a thing we walk on, like a pavement? Are we becoming, in our consciousness, separated from the stars—as indifferent to them as we are to the electric chandeliers in the lounge of an hotel? Are we being driven, or driving ourselves, into exile from the unity of nature? It is a simple question."

What shall we say? Shall we mimic Tolstoy and say, in grief at what has been lost, that we cannot "believe" as our less sophisticated ancestors believed, in the natural unities between man and nature—and then say that we know all the splendors out there are only cosmic furniture and utilities, stuff to get power out of, now more than ever, since our voracious habits are consuming the planet at so alarming a rate? And shall we turn our fading nostalgia over to the sentimentalist poets? Are we tough-minded enough to do this? Do we *know enough* to do it?

What are our first principles in these matters, and are they really our own?

It might be worth while to find out what our kind of sophistication has deprived us of, by looking, for example, at the writings of men who were fully as intelligent as any moderns, yet believed that a complex web of meaning joined man with nature, and that there were majestic reciprocities prevailing throughout the whole scheme of life. The analogue of our immortality that Charles Morgan spoke of as once found in the world of nature—how did nature acquire this significance for so many? Why was a similar meaning deduced from the great cosmic drama by Bruno? How did Blake come by his symbolic readings of all nature? Were the men who stirred the awakenings of the Italian Renaissance gullible romantics, or was the forward movement of European intellectuality, learning, and education which they spurred the result of a rare and unusual genius? And is it then wrong to say that the visionaries and enthusiasts of the past were the founders of modern progress—not the progress that has made us fitful, anxious, and strained in everything we do, but—the progress in the spread of humanist conceptions of the dignity of man, the inviolability of conscience, and the conviction that freedom of thought and the rights of man are the essentials of a true civilization?

Van den Berg repeats a story which Jean Cocteau related in his diary. In his maturity the French poet had returned to the street in Paris where he had lived as a child and during much of his youth. He walked shyly toward his old house, hoping to regain the feelings of his life there, of his pleasures as a boy. But they did not come back. He had not found a way to awaken them. He remained a stranger, a visitor.

> Thinking of the past, he trailed his hand along the wall. But he was not satisfied with the result; he felt something was missing. Suddenly it became clear to him what was wrong: he had been smaller as a child, his hand had touched surfaces which he missed as an adult simply because he was drawing a different line. He decided to repeat the experiment, but this time he bent down. (In Paris one can do such a thing.) He bent down, closed his eyes and let his hand trace the wall at a height which had been natural in the days he went to school. And immediately appeared what he had vaguely been expecting. "Just as the needle picks up the melody from the record I obtained the melody of the past with my hand. I found everything: my cape, the leather of my satchel, the names of my friends and of my teachers, certain expressions I had used, the sound of my grandfather's voice, the smell of his beard the smell of my sister's dresses and of my mother's gown."

And now, playing the hardheaded scientist, van den Berg asks: "Where did the memories come from?" Cocteau said they were from the wall, where he picked them up, but they were not, of course; they couldn't be. The wall was not *his* wall, but an impersonal wall. It is *our* wall, belonging equally to all of us in the objective world. Van den Berg considers this objection at length, which would be heard in any modern gathering, yet says, finally:

> Cocteau did not write, "When I traced the wall with my finger the memory awoke in my inner self," although he might have put it this way if he had wanted to express himself psychologically. Nor did he write, "When I traced the wall, I was admitted to the engrammes in my brain," which is what he would have said if he had had a preference for an obsolete neurology. What he said was, "Just as the needle picks up the melody from the record, I recovered my memory. My finger picked up the melody of my youth *from the wall."*

Van den Berg muses: "A wall is made of bricks, is it not? Memories are made of another matter. What *sort* of matter remains a problem." And so on. The modern world, in short, will insist on taking the poet's wall away from him and making it an ordinary wall, indifferent to human experience.

> The human element is within us; it is nowhere else. The world is not contaminated with anything human, it may seem to be contaminated with it, but the theory of projection shows up the true nature of the contamination: they are misplaced sentiments.

So man is an isolate, a lonely alien. No longer the microcosm of the macrocosm with threads of connection with all that is. The peak experience—of feeling one with the all—is the ultimate misplaced sentiment; the remarkably endowed human being, the psychometrist, described by William Denton in *The Soul of Things* (Boston: Walker, Wise, 1863), does not exist. The deep affinities felt by the men of the ancient world and by primitive peoples everywhere, linking them and all nature in the same psychic system, have died away, or been blighted into numb passivity. As Robert Redfield says in *The Primitive World and its Transformations:*

> Man comes out of the unity of the universe within which he is oriented now as something separate from nature and comes to confront nature as something with physical qualities only upon which he may work his will.

The old California Wintu Indian quoted by Theodore Roszak in *The Making of a Counter Culture* speaks feelingly of the sensibilities lost to modern man:

> "The white people never cared for land or deer or bear. When we Indians kill meat we eat it all up. When we dig roots we make little holes. . . . The Indians never hurt anything, but the white people destroy all. They blast rocks and scatter them on the ground. The rock says "Don't! You are hurting me." But the white people pay no attention. . . . How can

> the spirit of the earth like the white man? Everywhere the white man has touched it, it is sore."

Indeed, how could the rocks and edifices of nature let us pick up *their* melodies? What psychological universe could there be within the physical universe, for those who think of its actions as blind, its motions vectors from a fortuitous concourse of atoms? The songs of the universe are of necessity muted by such walled isolationism on the part of the highest intelligence on earth. You could call it the great betrayal. No music of the spheres for us. If nature speaks to us now, it is only with the rumble of anger, a shriek of pain.

But who, after all, really knows whether or not the melody of Cocteau's youth was in the old wall which seemed to answer to his touch? A man, Ortega said, is himself and his circumstances, and our circumstances extend in various ways, and to both physical and metaphysical depths. Why shouldn't the intimacies of a child's life have alchemical presence in its physical surroundings? Do we yet know all there is to know about the recordings and registering capacities of the "matter" all around us? Is the blast of a cyclotron likely to reveal such delicate mysteries and potentialities in the atom? To discover the consciousness in something—say, its psychic component—you do not bomb it into particles, making a shower of vagrant electrons!

Small wonder that, as Lecky suggested, the capacity for vision has died out of the modern world. Even the scientists, some of them, have felt the famine of ideas. The language of vision, of invention in the world of ideas as well as elsewhere, often has a poetic form. A soaring to heights is involved in creative thinking. Great generalizations are born in this way. Jean Paulhan, a French literary critic, sent some notes on this subject to Wallace Stevens to help him compose an essay on the relationship between poetry and science and philosophy. Paulhan wrote:

> It comes to this that philosophers (particularly the philosophers of science) make, not discoveries but hypotheses that may be called poetic. Thus Louis de Broglie admits that progress in physics is, at the moment, in suspense because we do not have the words or the images that are essential to us. But to create illuminations, images, words, that is the very reason for the being of poets.

What is the root difficulty when it comes to the question of visionary conceptions? Or splendid dreams? Generous-hearted ideas of human destiny? Vaulting hopes of immortaltiy?

Well, people ask for "proof." A couple of years ago a famous institute devoted to the mechanical arts and the theoretical sciences decided to add some more of the "Humanities" to its educational program, in the form of attention to "the arts." They collected several of the leading designers of the country to give them counsel. The climax (or the nadir) of the conference came when the designers, to a man, told the eminent engineers who ran the institute that no design project, no conception of planning in the service of man would be of value unless it had a foundation in moral values. "Oh," said the technologists. They didn't understand. They wanted to know what was meant by "moral values" and how you put them on a scientific basis. If anyone had been so foolish as to quote from Emerson the lines about the "two laws discrete/Not reconciled,—/Law for man and law for things," the technologists probably would have shrugged. Just shrugged. But nobody quoted Emerson, and the designers knew it was time for them to go home.

To have visions is a natural capacity of man—stultified, perhaps, today, as van den Berg seems to suggest in *The Changing Nature of Man*, but conceivably restorable. There is *power* in ideas, especially in days of hunger and longing. Van den Berg has an interesting passage about Rousseau in relation to the world of nature.

> Rousseau laid the foundations for a great change. The first observations on what since then has been called a "sense of nature" are contained in his

> Confessions of 1728. That this is not coincidence is quite clear now. In the *Nouvelle Héloise* (1761), the emotion felt upon observing Nature was completely described. Like an epidemic the new sensation spread through Europe. Everyone wished to see what Rousseau had seen. Everybody visited Switzerland and climbed the Alps. This had not happened before Rousseau. It was then that the Alps became a tourist attraction. Previously they had been an obstacle; a walk through the mountains had had few delights; the views were not in any way exceptional. Even in 1750 Henault, a poet and friend of Voltaire's, crossed the Jura and the Alps without the least enthusiasm, merely observing "There is always a creek at my side and rocks above my head, which seem to fall in the creek or upon me." These words would nowadays disqualify him as a poet—besides compromising his claim to be a human being.

However, for most people imitating Rousseau became a fashion; the people "ecstatically gaze at the snow on the mountain tops and at the azure of the transparent distance," doing so "out of a sense of duty." They are "simulating an emotion they do not feel." Yet there were gains. From the books of John Muir, there have been gains. From Aldo Leopold there have been gains. But now the need is for a larger version than that of æsthetic delight. We need to think about what it all *means*, and why we have been content to drift so far away from those living relationships through which the intuitive sense of meaning is daily renewed.

The Platonic, Plotinian, Brunonian and Blakeian sort of vision goes deeper and higher than that of the nature-lover. For the understanding they seemed to possess led to conceptions of life and order which men are able to turn into gracious habitations. Ennobling transcendental philosophy has been behind even the historically influential visions of the past. Consider the great Utopians, their poetic character, and the extent to which their ideas have shaped the best of the social forms we have, and given substance to our ideas of social responsibility. One thinks, in modern times, of Edward Bellamy, a great many of whose conceptions, as Arthur Morgan shows in his life of Bellamy, have been incorporated into actual social structure. Bellamy was a visionary philosopher before he turned to social engineering. In "The Religion of Solidarity," which he wrote at the age of twenty-four, he spoke of how the contemplation of nature affected him:

> Very often must it happen to everyone when wandering abroad at night, to feel the eyes drawn upward as by a sense of the majestic, overshadowing presence. . . . The soul of the gazer, drawn on and on, from star to star, still travels toward infinity. He is strange to the limitations of terrestrial things; he is out of the body. He is oppressed with the grandeur of the universal frame; its weight seems momentarily to rest upon his shoulders. But with a start and a wrench as of life from soul the personality reasserts itself, and with a temporary sense of strangeness he fits himself once again to the pigmy standards about him. The experiences which have been mentioned are but examples of the sublime, ecstatic, impersonal emotions transcending the scope of personality or individuality, manifested by human nature, and of which the daily life of every person affords abundant instances.

After speaking of the small importance of the earthly personality, he refers to that "other life" of man, "as it were a spark of the universal life, greedy of infinity, asserting solidarity with all things and all existence, even while subject to the limitations of space and time and all other of the restricting conditions of personality." So, "in the soul, is a depth of divine despair over the insufficiency of existence, already seeming too large, and a passionate dream of immortality, the vision of a starving man whose fancy revels in full tables."

"Such is the estate of man, and such his dual life. . . . This dual life, personal and impersonal, as individual and universal, goes far to explain the riddle of human nature and of human destiny."

This was Bellamy, visionary and dreamer. Yet the same man wrote: "As my physics become metaphysical, so vice versa. I am intensely practical in the sense that no abstract idea is any satisfaction to me till I have realized it concretely."

REVIEW
GANDHI FROM DAY TO DAY

FOR a long time, now, we have been receiving from the Publications Division of the Government of India the volumes of *The Collected Works of Mahatma Gandhi* (Copyright Navajivan Trust), as they come out, a few volumes each year. They are large books, usually at least 500 pages, with contents mostly of letters, although there is much other materia1 as well. Each volume covers writing done in three or four months of Gandhi's life.

At present we have for consideration volumes 48, 49, and 50, which contain his work from September, 1931 to August, 1932. A "review" of such diverse material is out of the question, although it is possible to take out what seem representative "cores." Volume 48, then, deals with writing done at the time of Gandhi's visit to England to attend a session of the Round Table Conference. Although the hope of converting the British to the view that India should have her freedom seemed slight, Gandhi believed he should go to London and do all he could. It was for him a "mission of peace," a means of ending the turbulence growing out of the struggle of the Indian people for independence. He had no success with the British statesmen, but he accomplished much in influencing public opinion in England. The quality of one dimension of Gandhi's appeal to the British is shown by what he said in a speech at Nottingham University College:

> I have used the term demand. As a matter of fact, no nation has ever secured independence by demanding it. Independence has to be earned by sacrifice and self-suffering. So far as history teaches, nations have come to freedom through rivers of blood. They have beaten back the intruder, oppressor or exploiter, but in the process have suffered a big share of the beating.
>
> We are fighting by truthful and non-violent means for freedom, the birthright of every nation. I am tired of people inflicting violence on others. Justice does not come that way. Civil disobedience has limitations, for millions cannot indulge in it. Our constructive activities consist of removing the curses of alcohol, drugs and untouchability. Don't think we are all at sixes and sevens because we have not yet arrived at agreement.

At about the same time, he was interviewed by the editor of *The Spectator,* a British weekly. Among the questions put to him were the following:

> Q. Do you then believe in the personal immortality of the soul?
>
> A. Yes, I believe in the immortality of the soul. I would like to give you the analogy of the ocean. The ocean is composed of drops of water, each drop is an entity and yet it is a part of the whole, "the one and the many." In this ocean of life we are all little drops.
>
> My doctrine means that I must identify myself with life, with everything that lives, that I must share the majesty of life in the presence of God. The sum total of this life is God.
>
> Q. Did any book ever affect you supremely and was there any turning point in your life?
>
> A. Yes, the book that affected me more than any other was *Unto This Last* by Ruskin. I was living in South Africa then. It was the reading of *Unto This Last* on a railway journey to Durban in 1904 when I was thirty-five, that made me decide to change my whole outward life. There is no other word for it. Ruskin's words captivated me. I read the book in one go and lay awake all the following night and I there and then decided to change my whole plan of life. Tolstoy I had read much earlier. He affected the inner being.

Since Gandhi spoke of "God" in one of his replies to the editor of the *Spectator*, we choose from the next volume, 49, a portion of his letter to Purushottam Gandhi, who had asked him to distinguish between the theism of the *Bhagavad-Gita* and the Jain teaching that there is no God. Gandhi wrote:

> I have never seen any difference between the Jain doctrine and the general Vedic doctrine. The difference is only one of point of view. The God of the Vedas is both a Doer and a non-Doer. Since the whole world is pervaded by God, He is a Doer, and yet He is not that because He remains untouched. He does not suffer the consequences of karma, since the world is not His karma in the sense in which we use

> the word. Looked at from this point of view, the verses which you have quoted from the *Gita* can be reconciled with one another. We should remember that the *Gita* is a poem. God does not speak nor does He do anything. We cannot say that God said anything to Arjuna. The conversation between Lord Krishna and Arjuna is imaginary. I at any rate do not believe that such a conversation took place between a real Krishna and a real Arjuna.

It would have been helpful, of course, if Gandhi had not spoken of God as "He," since the confusion he here dispels is brought back by the personal pronoun. However, in answer to another question about what he meant by saying "Truth is God," Gandhi said:

> I was not led to the conclusion that Truth is God by considering that God is formless and so is Truth. But I saw that Truth is the only perfect description of God. All other descriptions are imperfect. . . . The statement that Truth itself is God is a perfect statement as far as human speech can express anything perfectly. We shall come to the same conclusion if we consider the etymological meaning of the word "*satya*." It is derived from the root "*sat*," which means to exist eternally. That which exists eternally is *satya*, Truth, it can be nothing else. . . . By regarding Truth as God we save ourselves from many a pitfall. We no longer desire to see miracles or hear about them. We may find difficulty in understanding what "seeing God" means; there can be no difficulty in understanding the meaning of "seeing Truth." Seeing Truth may be difficult, it is so. But as we go nearer and nearer towards It, we can have an increasingly clearer vision of Truth that is God and that strengthens our hope and faith that one day we shall have a full vision of It.

Also in this volume, which covers five months (January to May, 1932) during which Gandhi was in jail, are several communications adding to what Gandhi said about the *Gita*, and also his "Letters on the Gita," written to the members of his Ashram, which were later published by Navajivan as *Discourses on the Gita.* In his comment on the first chapter of the *Gita*, Gandhi said:

> All of us should feel pain even as Arjuna did. No acquisition of knowledge is possible unless there is in us a sense of something lacking and a desire to know the truth. If a man is not curious even to know what is wrong and what is right, what is the use of religion for him? The battlefield of Kurukshetra only provides the occasion between the dialogue between Arjuna and Krishna. The real Kurukshetra is the human heart. . . .

Gandhi finds the third chapter to contain the key to understanding the *Gita*, for there, he says, it is shown that "life is given us for service and not for enjoyment." In a letter written to the ashram women, Gandhi spoke interestingly of the "war" in the *Gita:*

> In the age when the *Gita* was composed, the men who influenced its thought did not raise the question whether the violence committed in war was right or not. That question seems to have been raised only in modern times. . . . Our descendants may see violence in many things in which we do not see it today. . . . In exactly the same manner, war was regarded such a normal thing in the age of the *Gita* that people did not feel that they violated the principle of non-violence by engaging in it. The illustration of the war in the *Gita*, therefore, seems to me perfectly innocent. If, however, we reflect over the teaching of the *Gita* as a whole and examine the characteristics of the . . . yogi, we can come to only one conclusion, namely, that the Shri Krishna who taught the path of the *Gita* was literally an avatar of ahimsa and his exhortation to Arjuna to fight does not in the least detract from the purity of his ahimsa.

Early in Volume 50 a letter to H. S. L. Polak (a close associate of Gandhi in South Africa) shows the distortions which journalists typically make in their accounts of unusual persons who attract public attention. The London papers had reported that Gandhi had become discouraged by the slow production of the spinning wheel and tad shifted *to* championing the sewing machine. Polak had asked about this charge and Gandhi replied (in June, 1939):

> It will take me many incarnations to become disillusioned with slowness of the charkha [spinning wheel]. . . . Its implications are growing on me and I make discoveries of its beauties almost from day to day. I am not using a sewing machine in its place at all. I know how the mistake crept into the papers. My right elbow, having been used for turning the wheel, almost without a break, for over ten years, began to give pain, and the doctors here came to the conclusion that the pain was of the same type that tennis players often have after continuous use of the

> elbow. They therefore advised complete rest for the elbow. That might have meant cessation of spinning for some time, but for Prabhuda's invention [which] consists in turning the wheel with a pedal and practically doubling the output of yarn. . . . A stupid reporter who knew nothing of the invention, when he heard I was moving the wheel with a pedal, came to the conclusion that I was working at the sewing machine and since there are Pressmen good enough to imagine many things of me and impute all sorts of things to me, they improved upon the false report by deducing disillusionment about the charkha from it.

At about this time another correspondent asked Gandhi about the merits of a steel plough said to increase crop yield by 15% to 150%. This plough, if adopted, would replace the wooden plough made by village carpenters. Gandhi said:

> I do not mind the partial deprivation of the carpenter if the plough increases the earning capacity of the farmer. But I have very grave doubts about the claims made by Mr. Cooper for the invention. At Sabarmati we have tried almost all improved ploughs manufactured in India and I think even others, but the claims made for each variety have not proved true in the long run. An experienced man has said that the indigenous plough is specially designed for Indian soil. It conserves the soil, because it ploughs deep enough for the farmer's crops but never deep enough to do damage. Of course I do not claim to understand agriculture. I am simply giving you the testimony of those who have had considerable experience in these matters. What we have to remember is that all improved implements have to meet the peculiar conditions of India. There is nothing wrong in an engine plough in itself and it may be a great advantage to a man who owns thousands of acres of land, and has a cracked caky soil, which will not yield under the indigenous plough. What, however, we want is an implement that would suit owners of small holdings from one acre to three acres. . . .

Concluding, Gandhi comments on a familiar doctrine of the social philosophy of the Utilitarians:

> I do not believe in the doctrine of the greatest good of the greatest number. It means in its nakedness that in order to achieve the supposed good of 51 per cent the interest of 49 per cent may be, or rather, should be sacrificed. It is a heartless doctrine and has done harm to humanity. The only real, dignified, human doctrine is the greatest good of all, and this can only be achieved by uttermost sacrifice.

COMMENTARY
THE RECORD OF NATURE

ON the last two pages of *The Earth as Modified by Human Action* (Scriboer, 1874), George Perkins Marsh, who might be called the first of the scientific ecologists, mused at length on the assertion of Babbage in his *Ninth Bridgewater Treatise* (1837) that every human thought had an effect upon matter and that each particle of the existing matter must be a register of all that has happened. Calling this one of the most sublime "and at the same time most fearful suggestions," Perkins elaborated in his own words:

> Every human movement, every organic act, every volition, passion, or emotion, every intellectual process, affects all the atoms of universal matter. Though action and reaction are equal, yet reaction does not restore disturbed atoms to their former place and condition, and consequently the effects of the least material change are never cancelled, but in some way perpetuated, so that no action can take place in physical, moral, or intellectual nature, without leaving all matter in a different state from what it would have been if such action had not occurred. Hence . . . there exists . . . in external nature an ineffaceable, imperishable record, possibly legible even to created intelligence, of every act done, every word uttered, nay, of every wish and purpose and thought conceived by mortal man, from the birth of our first parent to the final extinction of our race; so that the physical traces of our most secret sins shall last until time shall be merged in that eternity of which not science, but religion alone, assumes to take cognizance.

This may be more than full-throated cosmic moralizing by a nineteenth-century writer on science. In last year's February *Harper's,* Lewis Thomas, dean of the Yale school of medicine, spoke of the flow of energy from the sun rearranging "matter into symmetry, away from probability, against entropy, lifting it, so to speak, into a constantly changing condition of rearrangement and molecular ornamentation," and he wondered if sounds representing this process "would have the arrangement of the Brandenburg Concertos for my ear." And perhaps, he thought, those cosmic harmonies would be echoed in "the rhythms of insects, the long, pulsing runs of birdsongs, the descants of whales." Then, in March of 1973, Arthur C. Clarke spoke at the Smithsonian Institution of the possibility of recovering sound associated with objects. (*Los Angeles Times,* March 17.) An electrical engineer at Princeton, Richard Woodbridge, he said, had detected sounds produced by a potter's wheel by exploring the surface of a clay pot with a phonograph pickup, and also found that a canvas painted while music was playing yielded snatches of the melody after it had dried.

Was, then, Jean Cocteau's sense of recovering the melodies of his youth from an old wall entirely fanciful? (See page 2.) He may have been making a rather precise scientific statement!

CHILDREN
. . . and Ourselves

PAULO FREIRE

IN MANAS for last Sept. 5, in a review of Paulo Freire's *Pedagogy of the Oppressed,* we said that understanding it is difficult for the reason that the book is written "almost entirely in terms of generalizations and abstractions." We have come across a review of this work and also of Freire's *Cultural Action for Freedom* (papers reprinted from and published by the *Harvard Educational Review*, 1970, paper, $2.00) by Michael Maccoby which goes a long way toward repairing this defect. The review is in *Science* for May 14, 1971.

Maccoby begins by saying that Freire was working successfully among the poorest *favelas* (shanty towns) in Brazil when the military took over the country in 1964 and he was exiled. He then worked for a while in Chile. Maccoby comments: "As far as I know, no count has been made of the educational experiments based on Freire's methods, but they are numerous throughout South America." Freire taught at the Harvard School of Education in 1969 and is now working with the World Council of Churches in Geneva.

Freire starts by using a few key or "generative" words which relate directly to the daily life and difficulties of the people. Education in language grows with education about themselves, with understanding of the factors affecting their lives—Freire, you could say, bases his method on a kind of self-knowledge. The teacher aids in self-education. Nothing else is of value, nothing counts without this growth in self-understanding.

Freire attacks conventional reading primers as "almost completely alienating and alienated." To illustrate he gives a passage from a text used in a conventional literacy campaign in Latin America:

> Peter did not know how to read. Peter was ashamed. One day, Peter went to school and registered for a night course. Peter's teacher was very good. Peter knows how to read now. Look at Peter's face. Peter is smiling. He is a happy man. He already has a good job. Everyone ought to follow his example.

This is barefaced misrepresentation so far as the peasants are concerned. Literacy has little to do with their ways of making a living. Correlation between material prosperity and literacy among them was almost zero, in a study made by this reviewer with Erich Fromm. Literacy might be of some benefit to urban slum dwellers, but another sort of motivation is needed for the villagers. Freire has an ennobling conception of why the illiterate should learn to read and write. He says that "the oppressed will learn when the motives for learning are to understand and creatively transform their world."

> Freire's approach is based in his concept of man's nature: Man is different from other animals because he has a drive to perfect himself and "humanize" the world. "Whereas animals adapt themselves to the world to survive, men modify the world in order *to be more.*

On coming to a village, Freire questions the people in terms of key words. To understand how this works, one would need recordings of such meetings, but the idea is to arouse the sleeping longing for freedom so that "there is an awakening and a sparking of hope as the educators and learners engage in dialogue about the 'reason' for the slum reality." This is the development of critical awareness, called by Freire *conscientization.* Summarizing Freire, Maccoby writes:

> . . . the majority of Latin Americans living in economic and politically dependent part-societies feel powerless and have internalized the ruling group's view of them as unalterably stupid. Before participating in the culture groups, words and other "codifications" in movies and television are seen by them as tools that can be wielded by the rich and powerful only, while they are fated to be "objects" of culture. This attitude changes as they become conscious of their feelings and social position. Then

> they begin to see that their condition worsens if they submit to the seductions of the modern consumer culture, spending what little money they have for packaged entertainment and manufactured goods. They discover that they are giving up their birthright as creators of culture, turning against their own art and artisan work to gain the illusion of participation in the modern society. They are further motivated as they discover that only they can codify their unique experience. Freire reports that after analyzing the unreal and sometimes contemptuous messages in many standard texts available to them, they want to create their own texts.

Maccoby says that there is little description of how the cultural groups operate in *Pedagogy of the Oppressed*, but that *Cultural Action for Freedom* supplies the particulars that readers hunger for in order to understand what Freire's methods actually attempt to do. Maccoby says of conventional approaches:

> Teachers and behavioral scientists from the industrialized world tend to see people as objects of culture to be programmed for adaptation, not as subjects who have the potential freedom to transform their mode of life. The goal of programming may be either "knowledge" or "correct values" (conservative or liberal). This approach is seen not only in behavioristic theories but also in what Freire calls the "banking" method of teaching, whereby knowledge is deposited in the student and later demanded on a test, and in the "nutritional" concept of the "humanitarians" who "introduce words into the learners' consciousness as if it were empty space."

By this time most readers will have thought of various parallels between the situation of the peasants and the condition of their own lives. For they, too, are subject to the same endless persuasions and propaganda concerning the paramount value of "packaged entertainment and manufactured goods." We, too, are goaded, cozened, cajoled, and warned to make our lives over into the pattern of the endlessly avid consumer, in order to become men of distinction and women of charm. It's all a kind of fake, and we know it, but no other models are presented with the same insistence, and the reflexs of suggestion affect the choices of a great many people. The difference between us and the Latin American peasants is that we are mostly self-betrayed, while they are held in a vise of poverty and ignorance. We don't *have* to succumb to standards of externally garish and internally empty lives, since as middle-class citizens we still have enough freedom and probably enough money to reject the easy ways of mass culture without starving to death. But mostly, instead of doing something about it, we read amusing columns about the widespread practice of deceit and misrepresentation, often responding with a light-hearted cynicism that exempts us from urgent obligation. *We* are not deceived. Would it be better, morally, to be penniless peasants?

Well, how does Freire work?

> Freire's method of teaching in the culture circle requires a technique of dialogue and of posing questions. Instead of teaching the student how things are, the pedagogue "problematizes" social reality. This requires a critical attitude toward appearances, and the consideration of alternatives. Freire adds that this method also requires a productive, nonauthoritarian attitude on the part of the investigator-pedagogue. Besides being interested in discovery, the teacher must be genuinely respectful of the people with whom he or she works. Freire states that the pedagogue must be free of the wish to impose an ideology or prove a theory, for that is another form of cultural oppression.

Wondering about a wider application of Freire's approach—in the United States, for example—Maccoby says:

> As a number of psychologists have pointed out, many people do not know what they feel, or have suppressed feeling in order to fit their roles. The sense of wonder has been lost. In rural Latin America, hopelessness has been caused by scarcity and oppression. Here it often comes about by consumerism, anxiety about the future, and the lack of responsiveness or joy in human relations. To apply Freire's approach to our own society requires considerable study.

FRONTIERS

More on the "Green Revolution"

AMONG the MANAS exchanges is a 32-page paper called *Retrieval*, published every two months, from 266 Gore Street, Fitzroy, Victoria, Australia, at $2.00 a year, which provides useful abstracts of informing articles on current events, mostly political. Edited from a radical point of view, the paper digs up material many readers are unlikely to come across. In the September/October 1973 issue, a summary of the contents of a pamphlet published by the London Haslemere Group, 515 Liverpool Road, London N7, 8NS, England, gives basic information on the Green Revolution.

The view of the writers is that the "Green Revolution" is something of a fraud. They say that the term was first used in 1968 by a former USAID director "to describe what he saw as a dramatic increase in wheat and rice production in India, due to the introduction of a new strain of dwarf wheat and rice into Indian agriculture." The basic research on these developments was done in Mexico and the Philippines. The work in both cases was financed by the Rockefeller Foundation, which persuaded various Asian governments to plant the new High Yield Varieties of seeds in preference to the improved varieties they had themselves developed. The report states that while the locally improved strains of rice yielded steady if not dramatic increases in production, and required much less irrigation and artificial fertilizers—and even tasted better to the people who would eat them—the governments chose to use the High Yield Varieties from the Rockefeller Foundation.

The objections to the latter are succinctly put:

> While admitting that a short-term increase in wheat and rice production did occur in India after the famine year of 1966-67, the Haslemere Group claims that the Green Revolution is not just a technological failure but has actually worsened the lot of many Indian peasants.
>
> This is because HYV (High Yield Varieties) rice and wheat are critically dependent on sufficient irrigation, drainage, fertilizers and pesticide in the right proportions and at the right time. Most of the successful production reports are from the Punjab and Haryana states which already had the highest per capita incomes and best land distribution, whereas 60% of rice production in India today is in areas where there is no tubewell or canal irrigation but complete dependence on the monsoon rains.
>
> To gain full advantage from HYV crops a degree of mechanization is called for which in turn requires capital outlay by the farmer—something which is quite beyond the means of the vast majority of Indian peasants who have farms of less than five acres each. The alternative is to borrow the necessary capital—a need which has forced many into the hands of the money-lenders and in many cases has caused the loss of the land to the bigger land-owners.
>
> Many U.S. corporations have a stake in the Green Revolution. A leading American enthusiast contributing to a 1970 government symposium stated that the "tremendous problem" of supplying the vast quantities of fertilizers, pesticides and financial resources for irrigation projects can only be handled by the giant corporations based principally in the U.S.A. and that therefore they should be given effective control of these new agricultural developments."

Conclusion: The "Green Revolution" is misnamed. It describes an annual increase in growth rate of 5% in wheat and rice production which is now levelling off and has benefitted only certain sections of the farming community in a few parts of India. "The lesson remains that a technological solution cannot work as an alternative to thoroughgoing social and economic reform."

Next in *Retrieval* is a long note on an article by Manin Harris which first appeared in *Natural History* for June 1972. This writer repeats the same practical objections to the high yield varieties of rice, reports a 3% drop in the Philippine rice harvest, and adds that the two main varieties used lack resistance to common plant diseases, and since they mature in the wet season require mechanical driers. "The short-stem varieties are more resistant to winds, but not to

floods which accompany many typhoons." Moreover, Indian cattle will not eat the short, thick stalks of the new strains, and in India rice stubble is the most important food source for cattle.

The note on the *Natural History* article concludes with a quotation and a comment:

> "The precise objective of the managers of the Green Revolution is to wipe out the class of small farmers and replace them with efficient agribusinessmen who will be heavily dependent on industrial products and world markets." Esso Standard Fertilizer and Agricultural Company has played a major role in the Philippines. Only the wealthier farmers can afford to buy the necessary extras like fertilizers; small farmers are likely to be forced off the land, perhaps to end up as lowly-paid migrant farmworkers or as slum dwellers.

Back in 1966, E. W. Pfeiffer of the University of Montana first began his campaign to organize an impartial scientific survey of the harm done to all biological systems by the defoliation program of the American forces in Vietnam. He described his efforts in the *Newsletter* of the Society for Social Responsibility in Science, January, 1969. At that time he stressed the importance of research by an *independent* group, since scientists helping with the biological warfare program could hardly be relied upon for good information. An opportunity came for him last summer, when the Scientists' Institute for Public Information, which publishes *Environment*, sent him and A. H. Westing of Windham College to Vietnam to examine the effects of the bombing and defoliation and make recommendations as to what scientists might contribute toward restoration of war damage in Indochina. Starting from Hanoi in July, the two American scientists traveled as far south as Da Nang, in South Vietnam, and they report on their findings in *Environment* for November, 1973. The article ought to have been titled, "Lest We Forget." In his final paragraph, Prof. Pfeiffer says that his deepest impression was "that of the incredible destruction brought upon an essentially subsistence-farming people." Even so, the people and the children laugh and sing while they rebuild. The principal needs are for metal detection equipment to locate unexploded bombs; for information on what and how to plant in herbicide-killed areas; and on desalinating soil ruined by ocean water because of bombed dikes. What to do about the countless craters that can't be filled by bulldozers or in places where they are unavailable is also a problem. This article ought to be read by all Americans.